



## Seminar Explores Color Blind Affirmative Action

By GRANT CHANG-CHIEN

Color Blind Affirmative Action This past Tuesday, tucked away in the tiny Baxter 25 conference room, Professor Glenn C. Loury from Boston University's Department of Economics presented a Humanities and Social Science seminar.

So what? For starters, the seminar's topic was "The Economics of Color-Blind Affirmative Action." If the recent Supreme Court

major controversy? (It is also interesting to note that Charlene Liebau, director of admissions, was among the audience.)

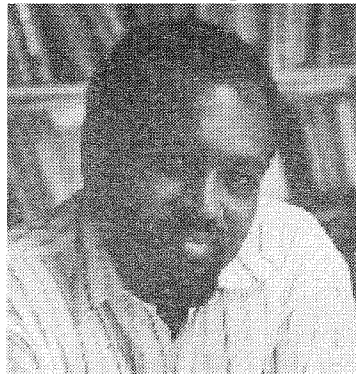
After practicing a bit of yellow-journalism to get your attention, I have to admit that the seminar and its accompanying paper tasted more akin to a technical conference than an emotionally charged political debate.

It presented the results of a study that quantifies how much a color-blind affirmative action admissions policy (one that cannot know the race of individual applicants) would theoretically degrade an institution's ability to pick the best performing class.

Professor Loury opened with some legal and policy background. The recent Supreme Court ruling has affirmed the principle of affirmative action. However, knowing and using an individual's race during the selection process was struck down as unconstitutional.

What intuitions still can do is weigh certain applicant traits (grades, parental income, SAT scores, etc.) more to place greater emphasis on traits that have historically been more strongly correlated with underrepresented groups.

However, this admissions mechanism forces the institution to pick a sub-optimal class because they are selecting individuals whose trait-set deviates from the trait-set that predicts the best performance in higher



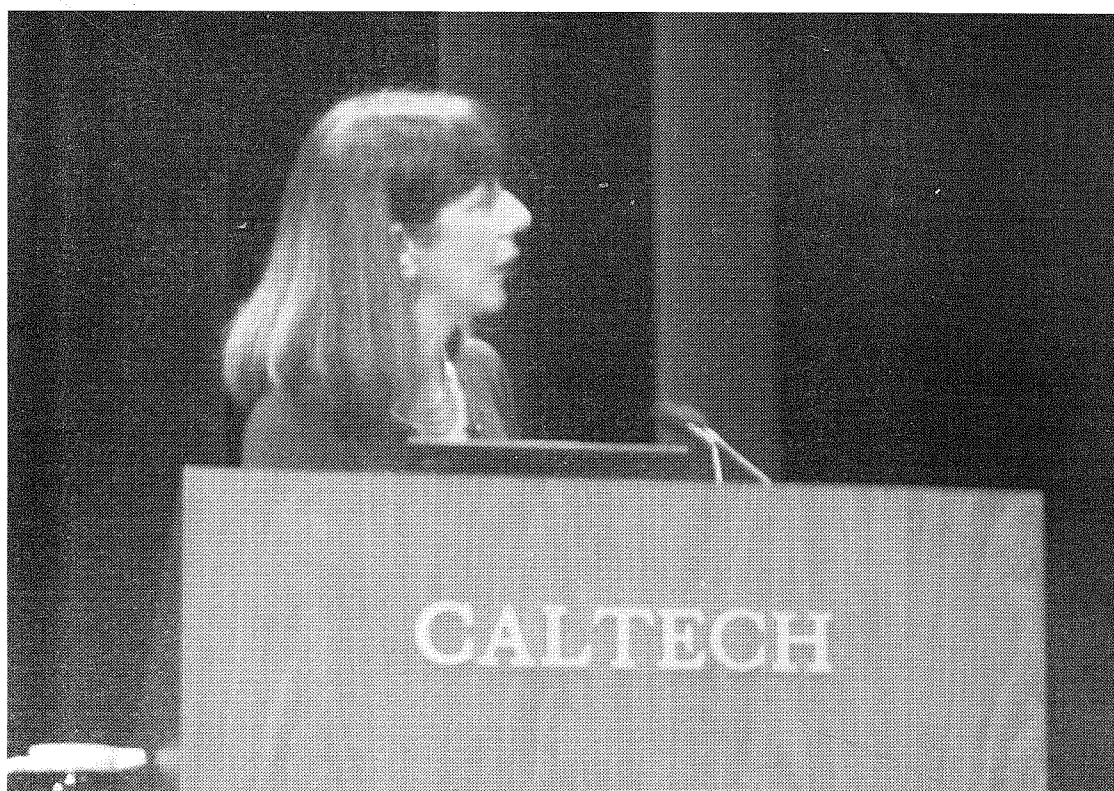
Courtesy of www.ksg.harvard.edu

Professor Glenn C. Loury

rulings on the University of Michigan cases seem too remote to make affirmative action relevant to you, look around the Caltech campus.

The demographic composition of our newest undergraduate class was described in the Caltech 336 as split between men and women 67% and 33%, respectively. The ethnic make-up is white 50%, asian 40% and latino 10%. How long do you think it will be before affirmative action becomes Caltech's next ma-

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L. Tran/The California Tech

Professor Jean Ensminger, who is head of the Humanities and Social Sciences Division, explains her work at an Orma village in Kenya as part of her Watson Lecture "Experimenting with Social Norms."

## Testing Reveals Connection Between Cultural Standards, Economic Status

By WILLIAM FONG

On Wednesday evening, Professor Jean Ensminger gave a lecture in the continuing Watson Lecture Series titled "Experimenting With Social Norms". Ensminger, a professor of anthropology and the division chair of the humanities and social sciences at Caltech, discussed her field work and case

study material from several decades of research with the Orma population in the East African country of Kenya.

The Orma have two economically distinct groups: the pastoral nomads, a heavily subsistence-oriented group who raise cattle, sheep and goats and migrate when the land's resources have been exhausted; and the sedentarists, a heavily market-oriented group that consists of artisans and merchants and tend to remain settled in one area.

These two groups were involved in the social experiments conducted by Prof. Ensminger that studied the effect of social norms on economic

decisions. A social norm is an informal rule that governs social behavior.

One of the social norms tested in the Orma population was fairness. To test the fairness norm, Ensminger conducted two games. The first game was the ultimatum game where two players from the same community, identities withheld from each other, were given the opportunity to split one day of wages (US \$2).

Player 1 got to decide how to split the wages with Player 2 and Player 2 got the opportunity to accept or reject the proposal. If Player 2 accepted, each player received the

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## Man Arrested for Burglaries; Campus Safety Confirmed by Security Report

By K. SZWAYKOWSKA

Safety is not generally viewed as a major concern at Caltech. Many undergraduates leave their doors open when they leave their rooms or when they are asleep, without feeling much concern that any of their property might be stolen or damaged while left unattended.

Similarly, crimes directed at individuals-such as robbery, assault and sex offences-are not issues that many students worry about at all.

Given that Caltech is located in a largely urban area and has a very open campus, this sort of breezy approach to crime may seem surprising.

We are very much justified in asking ourselves whether crime-report statistics support the impression created by the general Caltech attitude, that crime simply does not happen much on this campus.

The Caltech Annual Security Report was published at the end of October and is now available for gen-

eral access online (it may be viewed at security.caltech.edu/report.htm). In general, the statistics presented in it support the idea that Caltech is a rather safe campus.

Between 2000 and 2002, there were only two reported cases of aggravated assault, one forcible sex offence and four cases of robbery (defined as taking property from an individual by force or intimidation, as opposed to burglary, which involves stealing unattended posses-

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## Students Serve Homeless Dinner at Union Station

By JENNY IOFINOVA and ARTHI SRINIVASAN

The Caltech Y organizes several community service programs that happen regularly. One of these is the Union Station program, organized by Kai Shen and Rachel Medwood '04. Once a month, a group of Caltech students goes to Union Station, a homeless shelter and cooks dinner for the residents there.

According to Shen, Union Station is not like most homeless shelters: the residents there must show that they are making a committed effort to regaining good financial standing, are off drugs and are looking for jobs. During the week, a team of cooks prepares food for the residents; on the weekends, however, groups from the outside cook and serve meals.

A few years ago, Caltech student Jenn Caron decided that a group from Caltech could become involved with the program and now, students from Caltech participate on the third Saturday of every month.

The job of coordinator involves shopping for the food, planning the menu and organizing a group of students to go to the shelter. It is unusual for two people to be in charge of the program. But both Shen and Medwood seem to be happy with the arrangement. Shen commented: "Rachel and I decided to do it as a

two person thing, so the other person can take over if one of us is out of town or something."

According to Niki Zacharias, who coordinated the program for the four years before Shen and Medwood took over, the most challenging part of being coordinator is having the meal done and ready to be served on time. "Your job is to cook for 40 to 50 people," she explained, "Union Station residents have a very regimented schedule and they have to eat at 8 pm, so if you're not ready then, there is a possibility that they won't eat."

There are usually only six Caltech students who go each month, because the kitchen at Union Station can only hold that many people. Shen said that there are usually more replies from people who would like to go than they can actually take.

For the people who do go, it's three hours of solid work: the process of cooking takes two hours and serving dinner takes one. After serving, the Caltech students also eat the food they made, sometimes sitting with the residents. Despite that, however, there usually isn't much of a chance to interact with the residents or have in-depth conversations.

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## None Injured By Falling Tree Friday



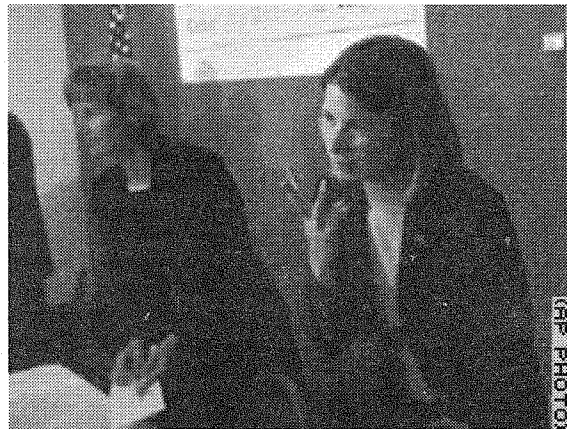
L. Tran/The California Tech

Half of a tree in the loading zone behind Ruddock collapsed late Friday evening. Fortunately, no students were injured and nothing was damaged. The tree will be removed Monday.

## Color Blind Admissions Produces Less 'Efficient' Class, According to Statistics

Continued from Page 1, Column 2 education.

Professor Loury cited past studies which showed that math SAT scores more strongly correlate with college performance than high-school grades. However, historical data has shown that underrepresented minorities are statically more likely to have lower math SAT scores.



Barbara Grutter and Jennifer Gratz were the plaintiffs in this year's controversial Supreme Court trial on affirmative action.

Color-blind affirmative action policies would have no choice but to de-emphasize math SAT scores and in lieu of less effective predictors such as grades. However, given the constraint of race blindness, the university would apply this sub-optimal selection weighting to all applications.

Color-blind affirmative action methodology obviously would translate into a class that has a lower total predicted future performance than a class selected by a laissez-faire admissions process where no constraints are placed on what information is used in the admissions process and no representation proportions are required.

However, the punch-line of Dr. Loury, et. al.'s paper is that a color-blind affirmative action methodology (now required by law) is even more inefficient than a color-sighted counterpart where there still is a target representation proportion yet the race of an individual can be used in the selection process.

In the color-sighted affirmative action methodology an admissions board can select the "best" underrepresented minority students

until a certain representation is achieved and then select the "best" students from the remaining pool.

In the color-blind affirmative action methodology, admissions may be admitting non-underrepresented minority students who happen to possess the sub-optimal trait-set that have been historically more correlate to underrepresented groups while rejecting underrepresented applicants who possess a more optimal trait-set which has been historically more correlated with overrepresented groups.

The difference is the "inefficiency" or "cost" associated with color-blind affirmative action. The quantitative study involved seven highly selective universities, ranging from liberal arts colleges to research institutes.

Dr. Loury, et. al. had these seven institutions perform data regression to determine what pre-admissions traits were best correlated with cumulative GPA (a simple measure of performance) after four years on a class that had already graduated.

These statistics were used to create a predicted performance figure for individual students and to define the laissez-faire (optimal) weightings. Similar regression was done to determine what traits more strongly correlated to underrepresented minority students.

Then the institutes were asked to, hypothetically, reduce their class size by one half using three different admissions methods laissez-faire, color-sighted affirmative action and color-blind affirmative action. The aggregate predicted performance of the newly reduced class using the laissez-faire method is considered optimal because the institution is not constrained in any way from picking what they expect to be the best class.

The predicted performance of the reduced class selected using the color-sighted and color-blind affir-

mative action methodologies were also calculated. For a college characterized as a highly selective research institute, a class "admitted" on color-sighted affirmative action would have had 98.85% predicted performance compared to the laissez-faire class.

With the color-blind methodology, the predicted performance would have dropped to 94.23% of the optimal. As reference, a class admitted by a mechanism that made a student's SAT score inadmissible (but was otherwise laissez-faire) would have had a predicted performance of 92.23%.

For an institution characterized as a selective liberal arts college, the color sighted affirmative action methodology would have produced a class with 97.80% of optimal predicted performance and the color-blind methodology would have admitted a class 85.30% of optimal. For comparison, a laissez-faire method that was blind of SAT scores would have produced a class 93.78% of optimal. The remaining five colleges exhibited similar trends.

In a sister paper, Prof. Loury explored the effects of large scale adoption of color-blind affirmative action admissions policies on the economic incentives of students to pursue educationally enhancing activities.

Admissions traits are endogenous variables traits affected by choices individuals make knowing what criteria they will be judges upon. Because of unanticipated time constraints, the results of this study of endogenous effect were only summarized at the end of the seminar. As the representation proportion of underrepresented minorities increases, the incentive to acquire academically enhancing traits (such as good math scores, etc.) theoretically go to zero!

Armed with this new quantitative understanding if color-blind affirmative, I began to ponder some very sensitive questions. Merely being at Professor Loury's seminar and listening to the passionate challenges to and defense of the methods and models employed, indicated what a serious issue the greater question of affirmative action will be.

## Question of the Week

Do you think the Supreme Court made the right decision in the affirmative action case?



Instructor in Biology Henry Lester lays out his research group's efforts to "solve" the problem of nicotine addiction.

## Increased Patrols Among Yearly Security Upgrades

Continued from Page 1, Column 3

sions).

However, the report also cites high incidence of theft (93 cases of burglary in 2000-2002; 10 cases of vehicle theft in the same years). "It's sort of disturbing how big a problem this is," says John Bender, Blacker House RA, also noting that most incidents involve bicycle theft. One Blacker student has already had a wallet stolen from his/her room this school-year, in the beginning of October.

The rather high burglary statistics may not seem surprising in a place where many people leave their doors unlocked much of the time, even when they leave their rooms; regardless of this, most students are not concerned about losing their valuables to burglars.

Many feel that the Honor Code, which prohibits taking advantage if another member of the Caltech community, provides protection against burglary. "I feel [that] safety's good and because of the Honor Code I feel a lot safer on campus and I'm not worried about any major damage or theft of my property," says David Baroll, a freshman from Page House. David adds that while he does lock his door when he's away, this is rather a habit (and a consequence of the door closing itself) than a precaution against burglary.

Other students generally agree with David's view of Caltech safety, saying that they believe the campus to be a "pretty safe" place. It seems too that because of its wide acceptance among students, the Honor Code does keep down instances of crime committed by members of the Caltech community.

Bender confirms this notion, saying that, compared with the college where he went as an undergraduate, he feels that he can "trust the students a lot more" at Caltech.

Why then, have there been so many reported instances of burglary over the last several years? As Gregg Henderson, Head of Security, explains, "[Caltech is] an open campus, so virtually anyone can come on" and "most problems come from outside."

There have been many instances of people who have no affiliation with Caltech, coming onto the campus and it is suspected that most burglary incidents are their doing. As an example of this, Henderson cites the series of burglaries committed during the last school-year by one off-campus individual who was caught and jailed over the summer; he had been stealing laptops and other valuables from student houses for some time before he was caught.

There is, then, more cause for concern about security on campus than might be apparent at first glance. Though Caltech, in comparison with similar schools throughout Southern California, is very safe, everyone is advised to

lock the door when leaving his room (or a laboratory) even for a short while.

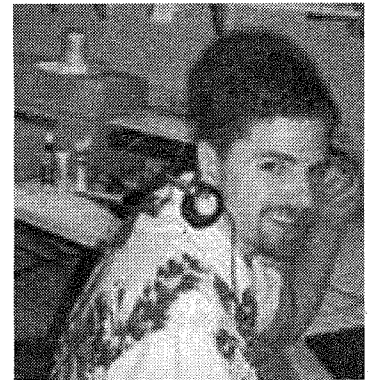
Also, immediately contact Security if you see anything suspicious (such as unfamiliar people walking through the houses or laboratories)-Security can be reached by dialing extension 5000 anywhere on campus. Bender also recommends using the escort service (ex. 5000) for anyone who feels uncomfortable walking around the campus or nearby area alone after dark.

To end on a positive note, though, we should also recognize that there has been no significant increase in crime at Caltech over the past few years. Henderson points out that although the Annual Report shows an increasing number of burglaries (16 in 2000; 28 in 2001 and 49 in 2002), this apparent increase is due to different definition of "burglary" over the years rather than to actual increase in the number of incidents.

By raising community awareness of crime on the campus and cautioning students to secure their belongings, Henderson hopes to decrease these statistics. Also, to improve campus security, there have been several changes in the Security Department this year.

The contract Security service was eliminated, making Field Officers Institute employees. Motor vehicle access to the campus has been restricted by construction of traffic barricades at campus entrances. The number of dedicated uniformed officer patrol has been increased around student housing. Direct radio contact has been established between the Pasadena Fire Department and campus Security to improve emergency response services for the campus.

Overall, then, Caltech has a very safe campus. There is little need to worry about criminal activity, so long as one takes into account certain common-sense precautions.



Blacker RA John Bender encourages students to use the security escort service.

## Games Relate Fairness, Economic Development

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amounts proposed by Player 1; if Player 2 rejected, both players went home with nothing. The results of this game were that about 80% of the sedentarists split the wages 50-50 whereas the nomads had figures that ranged from 50-50 to 70-30.

The second game was the dictator game. Once again, two players were to split one day of wages but this time the proposal of Player 1 was final with each player receiving the amounts specified in the proposal. In this game, Player 2 did not have a chance to voice their opinion. As a result, the outcome of the game was different. Only 50% of the sedentarists split the wages 50-50 whereas the nomads had figures that ranged from 50-50 to 100-0.

Hence, fairness was important to the sedentarists when there was a chance of rejection, but this social norm became less important when there was no chance of rejection. However, there does not appear to be a fairness norm in nomad society, but there does exist a zero aversion where people are reluctant to leave another person in their community with nothing.

Prof. Ensminger also presented results of these fairness norm experiments from the work of over a dozen fellow anthropologists in regions that spanned Africa, Mongolia, Indonesia, Papua New Guinea, South America and Missouri.

The population at each site was classified as one of the following five groups: hunters and gatherers, horticulturalists, herders, farmers, or those from industrialized nations.

Results showed that in general hunters and gatherers were the greediest while the Missouri group was the fairest. The horticulturalists had the largest variation between different test sites.

In conclusion, Ensminger points out that fairness is an important social norm in societies with economic market integration whereas cultures that lack markets do not exhibit this social norm. Hence, the data suggests that there exists a co-evolution of market institutions with social norms such as fairness.

James Heath will give the next lecture in the Watson Lecture Series on January 14th on the subject of nano-systems biology.

### The California Tech

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VOLUME CV, NUMBER

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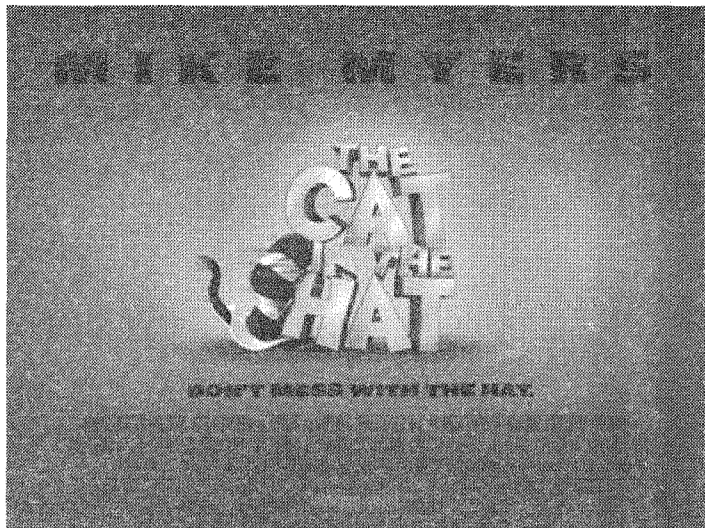


Photo courtesy of Universal Studios

## Cat in the Hat Enjoyable But Unspectacular Film

By HARRISON STEIN

Years of hard work have rendered our minds cynical, but for those who still have a kid in them, *The Cat in the Hat* is the perfect antidote to the rigors of Caltech. Even though the movie is far too babyish for the general population and doesn't quite measure up to such recent classics such as *Shrek*, *Finding Nemo*, or *The Grinch*, it offers seventy-eight minutes of solid entertainment that will surely bring back countless childhood memories.

2000's *The Grinch* was a stunning breakthrough because it was the first motion picture with a major actor wearing a full body costume in a starring role. Jim Carrey was virtually unrecognizable in his Grinch outfit but he brought humor, heart, and panache to his well-written character. *The Grinch* was an enormous box office success because it appealed to Dr. Seuss and Jim Carrey fans alike, and predictably, the same producers capitalized by making *The Cat in the Hat* with another world-renowned comedian, Mike Myers.

At the beginning of the picture, young Sally and Conrad sit at home, bored out of their minds, when an outrageous talking, singing cat with a ridiculous, two-foot tall, red and white hat (Myers) appears. Sally is an obnoxious control freak who repels friends like a cat repels mice and Conrad is a menace so despicable that his mother considers sending him to military school.

Of course, the cat finds a way to amend their faults while wrecking the house, infuriating the pet fish and opening a portal to an alternate reality in the process. Sound familiar? The writers add some plotlines that were not in the book, such as the single mother's (Kelly Preston) relationship with a vile oddball from next door (Alec Baldwin), because the 1500-word story is not long enough to fill eighty minutes of screen time. The additional plot

is hackneyed but the film still has its heart in the right place.

Mike Myers makes the most of a one-dimensional character with an admirable, if not spectacular, performance. He consistently steals scenes with his vibrant persona, and although his voice is an unoriginal blend of Shrek and Fat Bastard, he's unmistakably comfortable performing in the cat suit. Like Jim Carrey, Myers proves he is one of the great comic minds of our generation by succeeding in a role unlike anything he's done before.

Because *The Cat in the Hat* lacks a strong story, it relies on stunning visuals to carry it through its short runtime. The atmosphere is not as dazzling as Whoville from *The Grinch*, but the cat's wacky, inventive gadgets (such as the muffin maker, house-cleaner-upper, and car with three steering wheels) are a sight to see.

The non-human characters, like the cat and fish, are hardly believable, but they aren't meant to be. The wild backdrops of the house and the symmetry of the city are perfectly suitable for a Dr. Seuss tale. The story might not have made a clean transition from book to film, but there's no doubt that Dr. Seuss would have approved of the awe-inspiring visuals.

All in all, *The Cat in the Hat* is a fun, spirited movie that won't win any Academy Awards, won't change anyone's life, and won't be remembered in twenty (or even five) years. The target audience is ten and under, and frankly, there aren't enough adult jokes to entertain a non-Dr. Seuss devotee. If you're in the mood for fine cinema, avoid this at all costs. However, if you're a Mike Myers fan, a Dr. Seuss aficionado, or a sucker for juvenile films, this is the purrfect movie for you.

\*\*1/2 out of \*\*\*\*

## BOC Conference Inspires Reflection

By GALEN LORAM

As midterms wind down and finals still loom a couple of weeks away, our lives begin to return to some sort of normalcy: perhaps you'll have the chance to look at yourself in the mirror. Perhaps you're fixing your hair, perhaps you're brushing your teeth or perhaps – god forbid – you're doing your makeup. I hope, however, that when you look at yourself you'll be able to smile and feel proud of the fact that you know that you've made it through another set of exams having stayed on the straight and narrow.

Caltech, as you no doubt know, is an anomaly. You can pick a teacher out of a crowd in Pasadena (no doubt you've heard giggles from groups of people wandering down the street as they spot a group of "Caltechies" going somewhere), or apparently in an airport in the Netherlands. The current – and immortal – fashion trend is ill-fitting jeans and career fair t-shirts. The average number of parties per week on campus is less than one. Unless, of course, you count the ubiquitous homework parties – in which case the number skyrockets to hundreds a week. These "parties," as they are sardonically called, are the heart of what makes Caltech Caltech – Collaboration. People here are of a non-trivially different sort that most of those in the world that we live in. How many of you have ever wandered over to another house that you normally don't set foot in to ask for a hand on a difficult set from someone you hardly know – and had them happily set down whatever they were doing to lend a hand? I would wager that it's a supermajority of you. Virtually anywhere else, unless the person is your best friend, you aren't going to get help – and that's only in those rare cases that it is allowed. At most schools if there is ever a take-home exam, a few students take a huge number of copies. That happens here too. The difference is here the students put them outside their door so that people can save themselves the walk to Sloan; at another school the students who take the large number of test throw them in the trashcan, so that their peers can't even take the test.

I recently had the chance to attend the annual Center for Academic Integrity conference. You can think of it as a sort of "BoC Chairs of the World Unite" gathering. I don't know exactly what I was expecting when I walked through the doors of the conference, but I must say that I was surprised by what it was. It turns out that a decent number of schools have honor codes – the tragic difference between their honor codes and ours is that people don't take them seriously. In fact, it seemed to me that even the people who were on the "Honor Boards," as they often call them, (I think Board of Control is infinitely more

sexy) didn't really take it seriously.

More than one conversation proceeded as follows:

"So, you're from [insert school here]"

"Yeah..."

"So what sorts of things does your Honor Board do?" (Yes, I know it sounds cheesy; it was, however, the Center for Academic Integrity, so such questions are a permissible second sentence)

"We just had our integrity week, it was really exciting!"

"Integrity week?"

"When we have speakers and banners, things for people to sign, to get them excited about academic integrity!"

"Ah... cool. So people take the honor code seriously at [school]?"

"As much as they do anywhere else..."

"???"

"Well, there are people who don't cheat. My roommate brags to me periodically about how she cheated on an exam, but I know there are people who don't." At that point my jaw would drop, and we'd continue the conversation in one way or another.

I guess I sort of always took the honor code for granted, having never gone to another college. I went to the BoC presentation at Frosh Camp. Yuri – my BoC rep back then – gave me the BoC talk, and I obediently smiled and nodded. I went and asked a couple of upperclassmen if people really followed the honor code, and they affirmed that they did, and I was sold. Clearly this isn't the case in most of the world. Don McCabe, the foremost expert on the statistics of cheating in high schools and colleges, has numbers showing that about 3 in 4 college students cheat at some point during their career – whether it be through plagiarism, disallowed collaboration, or outright cheating on exams. Ask around here – the average numbers that I've heard around 2-4%.

So why does the honor code work here and not at hundreds of other schools? There are the easy explanations – that we're at a science based school where people understand the importance that other people are honest; that we're a school where a high percentage of people go on to graduate school and thus are going to actually be involved in what we do; that we're one of the best schools in the nation where even people not ranked in the top half of the class will go on to be successful – so you don't need to cheat to get ahead; that we're a small school where people feel a sense of personal responsibility to one and other and don't want to betray that trust for just a few points on a midterm. I'm not going to discount any of those explanations – I imagine that they're all a significant portion of the explanation, but I think it's something a little bit more ethereal. After all, to briefly address the statistics in the

tech a couple weeks ago, we noticed a slight upswing in cases last year. Why? I'd argue that it was due to a larger freshman class – an effect with an obscure set of consequences. Not just are there more freshmen to commit violations, but I think that it decreases the sense of community between people in the class. I'd thus imagine that we'll have a lighter case load this year – a small class means that more people know each other and feel responsible to each other, and thus have a stronger impetus to refrain from "screwing the next guy."

But the last explanation isn't quite honor. It's more 'morals' or 'ethics' as Cathy Jurca poignantly pointed out during her intro to one of the freshman BoC presentations at Frosh Camp. In fact, none of the above are honor. Her characterization of honor as an archaic and out-moded concept that we, for whatever reason, still cling to prompted more than a couple hours of thinking on my part. Honor is something that you do for yourself. The reason you have honor is not that you don't want to receive an email from Harris or me with the subject "Confidential." You have honor so that, when you wake up and are frivolously trying to wash the smudges off your face and cover up the deep circles under your eyes from being up until 4:30 AM finishing your ACM 95 problem set, you can still smile, knowing that you've been true to yourself. And for that, I salute you.

Why do Caltech community members have this sense of honor that others seem not to, especially when they seem so unaware of it? Suggesting to a Teacher that the honor code is somehow related to his or her own, personal sense of honor is far more likely to draw an eye roll than an agreement. After all, we don't meet on Beckman lawn with pistols at dawn, to mark off our ten paces. We don't swear fealty to King Baltimore or Lord Revel. It does not seem that honor overtly plays any particular role in our lives. Yet it seems undeniable that we do have this sense of honor. From whence, then, does this sense of honor come? I mentioned that it was ethereal; perhaps we were all picked on as children and learned to have some sense of what is good and right; perhaps it is a sense of honor which drew us to science. Or perhaps, paradoxically, it was a love of science which drew us to honor. I wish I knew. Regardless of the reason, it seems likely that the simple fact that we do seem to have a sense of honor is why our honor code still works, nearly a hundred years later. And it also seems likely that it is a lack of personal honor, or its equivalent, which causes so many other schools to have to strive to approach a system that we take for granted.

With thanks to Harris and Lizz for their help on the scribing and editing the above.

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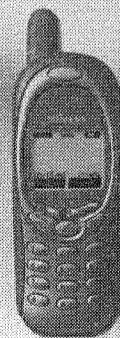
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# Nurture Student, Faculty Bond at Special Luncheon

By TOM FLETCHER

I would like to encourage you all to attend a student-faculty lunch this Wednesday in the Avery Dining Hall. Whether your student invites you or not, faculty please attend. If you're a student, invite your prof or just come and show up! The lunch will begin at noon, but if you're pressed for time, you can show up at 11:30 without problems.

The idea behind the lunch is to nurture bonds between undergraduates and faculty. In recent times, it seems the relationship between these two groups has grown distant due to the time constraints that pressure both of them. Students lament that they have never talked to their professors; professors I have talked to wish that students would make an effort to reach out to them. Well, this is your chance. If all goes as planned, it is hoped that we can expand this program and hold it on a weekly or bi-weekly basis!

I would like to thank one enterprising undergraduate, Alex Shim. Since the beginning of the year, he has toiled behind the scenes to help David Goodstein and the CUE with academic matters, served as an undergraduate liaison to the graduate students' Center for Effective Teaching project, and strived to rebuild the connection between the undergraduates and faculty that once thrived at this school. If our student body had more civically-minded students like Alex Shim, even just a dozen, we would be much farther along in making this school a better place. If there were an ASCIT Medal of Freedom to dole out to private citizens dedicated to public service, Alex would be one of the first recipients.

### Whom I Met With This Week

I met with Margo Marshak this week, as usual. We had a long discussion about student leadership and how we help her do her job, and how she helps us. We also discussed the need for the culture of student governance to really thrive and mature. One thing Margo wants to do is get to know interested students before having to work together in an official setting. If you are thinking about running for house president or an ASCIT position next term, consider introducing yourself. Swing by the office in Parsons-Gates, and maybe schedule a lunch or coffee date so you can get an idea of what working with administrators will be like.

We also discussed what we, the

students, can do. One thing I am committed to is making a smooth transition to the next ASCIT BoD, so they have a clear idea of how to do their job and can set a timetable to fulfill their obligations and plans. Consider this: sign-ups for ASCIT President and BOC Chair will go up at the start of the second week of second term. Over the Thanksgiving break, think about whether you want to do one of these jobs. If you have questions or are curious, talk to myself or Galen. I am personally hoping that many people are excited to run for president and would like to help you in any way possible to ensure a diverse race for the office next year.

The ASCIT BoD also met as a whole with Margo and Ken Servis, the registrar at USC, to discuss how to overhaul the Caltech registrar's office. From our discussion, it is clear we have a lot of work to do, but plans are being made to implement web registration, on-line transcripts for unofficial use, and other useful services (and don't worry, web registration won't prevent you from double-booking a class!). The goal is to have a new registrar in place by the end of the year and to begin implementation of these new systems immediately. If you have any feedback or concerns on the matter, please direct it to Tom Vanderslice in Fleming; he is the undergraduate representative on the registrar search committee.

Happy Thanksgiving!

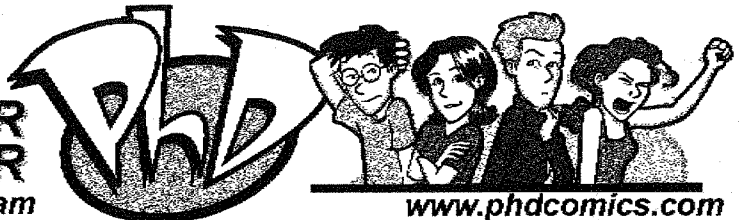
Yes, it's a short column this week, but that's because I'm late for my train home for Thanksgiving. Try to take some time this coming break to rest up for finals week, and freshman, don't scare your friends too much (and be delicate with high school significant others... it'll be a tricky weekend)! And while you're taking a break from being thankful for delicious food and family, you can look forward to Midnight Donuts! They are tentatively scheduled for the first Wednesday in December (week 10), Donut Man's ability to make us enough donuts for that night permitting.

Peace out Caltech,  
Tom Fletcher

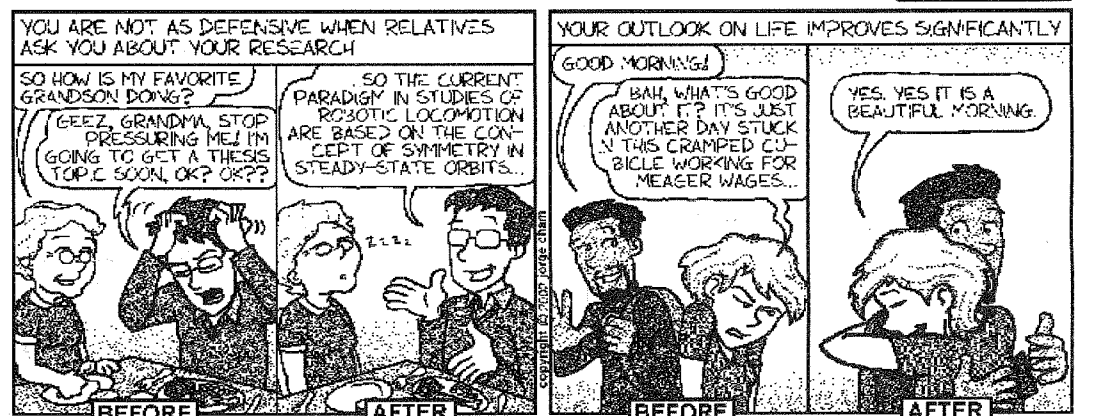
PS: Don't forget to apply to work on the Donut website if you have any interest in learning how to code, maintain, or protect a website! Check it out at donut.Caltech.edu

## PILED HIGHER AND DEEPER

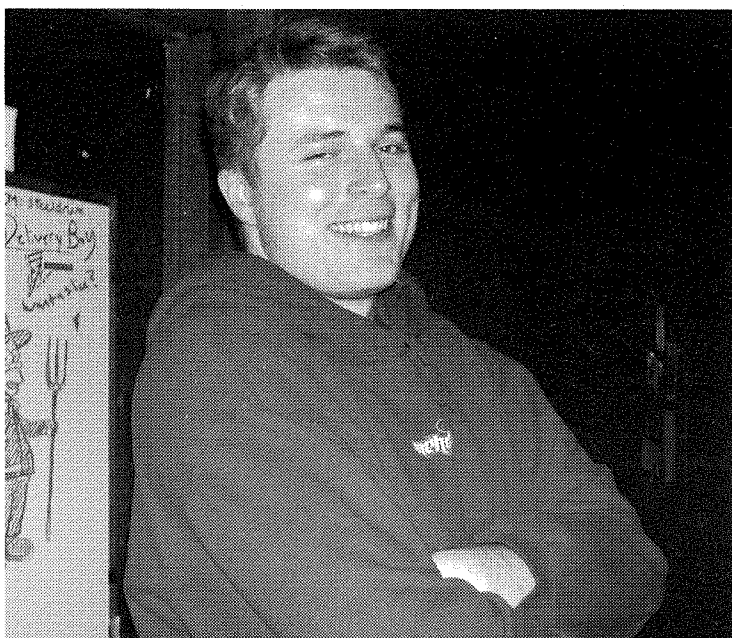
by Jorge Cham



### SIGNS YOU'RE CLOSE TO GRADUATING



### SIGNS YOU'RE CLOSE TO GRADUATING 2



L. Tran/The California Tech

ASCIT President Tom Fletcher takes a moment to relax, as he suggests all students do this over the long Thanksgiving weekend.



**Women's Center Events:**

- Graduate Women's Discussion Group. Every Tuesday. 12-1pm. Women's Center Lounge. This gathering allows graduate women to explore topics pertinent to their academic, professional, and personal lives.

- Reading Women. Monthly, next meeting December 4. 12-1pm. Women's Center, room 265 Keck Center for Student Services. A monthly reading and discussion group focusing on issues in Women's Studies. For more information or to join the group please email Loren at [Loren.Kajitani@caltech.edu](mailto:Loren.Kajitani@caltech.edu)

**Hixon Writing Center.** Want a sounding board for an essay or report that you're writing? Need advice about a statement for a research proposal or a grad school application? Visit the Hixon Writing Center for a free conference with a peer writing consultant. Conferences can benefit writers at all levels of ability. Consultants offer useful feedback at any stage of the writing process from brainstorming and drafting, to editing and revising. This is not a proof-reading service, but a chance to develop strategies for improving your own work. Where: SAC Club Room A. When: Sunday-Thursdays, 4:30-6 PM & 8:30-10 PM. Other times by appointment: email [writinghelp@caltech.edu](mailto:writinghelp@caltech.edu). For more information, go to <http://writing.caltech.edu/>

**Caltech Ballroom Dance club** invites you to join us to learn the popular, flashy, sexy **American Tango!** The series of four classes taught by professional instructor, Andre Fortin, begins on Nov 6 and runs on Thursdays (except Thanksgiving) until Dec 4. Time: 7:30 - 9:00 pm. Place: Winnett Lounge. Cost: Students - \$20 for series or \$6 / class and Nonstudents- \$28 for series or \$8 / class. Refreshments will be served. No experience or partner necessary!

Try **Caltech Ballroom Dance** team classes in **International Style Quickstep!** These classes will focus on form and style, in addition to learning exciting new moves. While we welcome beginners in this competitive-style class, practice outside the class is strongly recommended. This series of four classes taught by professional instructor Andre Fortin begins on Nov 6 and runs on Thursdays (except Thanksgiving) until Dec 4. Time: 9:30 - 10:30 pm. Place: Winnett Lounge. Cost: \$3-\$6 / class depending on attendance. No experience or partner necessary!

On March 12 and 13, the Dance Troupe will present the first ever **Caltech Dance Show** presenting the dance talents of the Caltech community. We are eager for a wide variety of dance styles; so, auditions will be open to all members of the community.

The first part of the process will consist of a written proposal. Choreographers will submit information describing their intended piece's music, theme, style (country of origin if applicable), and staging (likely number of dancers, lighting concepts, etc). The point of the proposals is to get people to start working on their dance pieces. Proposals will be due on November 17 and are available at <http://troupe.caltech.edu>.

There will be an audition in early

Winter quarter where the dancers for each piece will perform; costumes will not be required at this stage. For more information, contact Robin Deis ([deis@its.caltech.edu](mailto:deis@its.caltech.edu)). More details will be provided as the year progresses. We look forward to giving Caltech a chance to showcase its dancing talent.

**Dance Troupe Fall Classes.** There will be eight classes in each professionally-taught dance series. All classes meet in the Braun Gym multipurpose room. No special clothing or shoes are required for the beginners' classes. To attend classes, simply show up with a Caltech ID or gym membership card. RSVPs are needed for the bellydancing class ([Kathy.Kelly@caltech.edu](mailto:Kathy.Kelly@caltech.edu)). To be added to our mailing list, please e-mail [troupe@caltech.edu](mailto:troupe@caltech.edu). For more information, see our website: [troupe.caltech.edu](http://troupe.caltech.edu)

**Hip-Hop for Advanced Beginners**  
Thursdays, 9:30-10:30 PM, starts 10/9  
Professional Instructor: Collette Sibal  
Trial class fee: \$5  
Caltech students full term fee: \$30 (\$3.75 per class!)

Other Caltech community members full term fee: \$40 (\$5 per class!)

**Beginning Bellydancing**  
Saturdays, 12:45-1:45 PM, starts 10/4  
Professional Instructor: Leela  
Trial class fee: \$5  
Caltech students full term fee: \$30 (\$3.75 per class!)

Other Caltech community members full term fee: \$60 (\$7.5 per class!)

CLASS SIZE IS LIMITED so RSVP to [Kathy.Kelly@caltech.edu](mailto:Kathy.Kelly@caltech.edu)

**Beginning Ballet**  
Wednesdays, 10-11 PM, starts 10/8  
Instructor: Julie Liu  
FREE!

**Advanced Ballet**  
Mondays, 10-11:30 PM, starts 10/6  
Instructor: Catharine Larsen  
FREE!

**Caltech's "Monster" Calendar**  
Have you used the "monster" master calendar to announce your club, organization, or academic events? Did you know that more Caltech events are listed there than anywhere else? That means more readers, more interest, better attendance, plus less chance that the seminar, colloquium, or meeting you've so carefully put together will be overlooked.

Here are some "monster" stats to back up the monstrous claim:  
- On an average day, the online calendar (<http://today.caltech.edu/calendar/>) receives between 1,000 and 1,500 hits.

- Approximately 6,000 paper copies of the calendar are sent into circulation every two weeks as part of *Caltech 336*.

- On a busy week, as many as 70 events may be listed online, each of interest to members of the Caltech community.

A single submission to the online calendar is all it takes to reach the whole campus via the Web and in print. Why settle for a small readership when you can get your event seen by almost everybody? Call 395-3630 or e-mail [debbieb@caltech.edu](mailto:debbieb@caltech.edu) for more information.

**Scholarships**  
The Financial Aid Office has applications and/or information on the following as well as addi-

tional undergraduate scholarships. All qualified students are encouraged to apply. Our office is located in the Center for Student Services M/C 110-87. Please see our website for more information: [www.finaid.caltech.edu/news.html](http://www.finaid.caltech.edu/news.html)

**The American Electroplaters and Surface Finishers Society** offers scholarships to juniors, seniors and graduate students who are interested in careers in surface finishing. This includes those majoring in: Chemistry, Chemical Engineering, Environmental Engineering, Materials Science, Materials Engineering, Metallurgy, or Metallurgical Engineering. Applications with all requested documentation must be postmarked by April 15, 2004 in order to be considered for the 2004-2005 academic year. Applications are available in the Financial Aid Office. Additional information is available at: <http://www.aesf.org>. If you are a college student who is interested in becoming a naval officer when you graduate, you could apply for the Baccalaureate Degree Completion Program (BDCP). This program pays future naval officers a monthly salary while they are still attending college. Qualified technical majors can receive a salary of approximately \$1,500 per month for up to three years prior to graduation and qualified non technical majors can receive this salary for up to two years prior to graduation. Additional information is available at: [www.navy.com](http://www.navy.com).

The following scholarships are also still available. Please check our website for details: [www.finaid.caltech.edu/news.html](http://www.finaid.caltech.edu/news.html).

- American Heart Association 2004 Undergraduate Student Research Program

- The Society of Exploration Geophysicists SEG Foundation Scholarships

- American Society of Naval Engineers

- The Ron Brown Scholars Program

- Glamour's Top 10 College Women

- James Madison Memorial Fellowship

- The Measurement Science Conference Scholarship

- National Council of Jewish Women of Los Angeles

- The Air Force Reserve Officer Training Corps

# Admissions Director On Students: 'Gallant' Effort

By DAN LANGDALE

Greetings to the Caltech community from an old friend and (former) (interim) Director of Admissions.

I am delighted to be back at Caltech for a while, having left in 1991 (after the Class of 1995 was admitted) to join my wife on the east coast — ending our three years of commuting. I left rather dejected about my departure — unlike the Class of 1991 which Sharry and I watched graduate in the company of the first President Bush. Dejected because I enjoyed my job and the people I got to see daily. Many are still here, so I am glad to return and I am looking forward to meeting this generation of Techers.

I know Institute of Technology students pretty well, after nearly 40 years in admissions and financial aid at the C- and the M-, and I continue to take fun in getting to know them and adding to my understanding.

Whatever else I have the opportunity to gain and share during my time here as this new century begins, I wanted to start by plagiarizing myself by sharing some of the thoughts I offered when I left over a decade ago. If the nation's culture has changed in the meantime, it has done so to make your studies still harder to bear, but still more important to the world.

The problems holding the world hostage have had centuries to grow. But I am pleased to note that we have again this fall added to Caltech a group of young women and men who in their trifling two decades have acquired the ambi-

tion and the blossoming ability to deal with those problems. The mother of all educations will begin for them as they join their fellow laborers in overcoming barriers to understanding.

From the right place to stand, one will see these young people struggle — battling ignorance on one side and fatigue on the other. At 3 a.m., wrestling an elusive concept in physics, fame and fortune fail to motivate and only those angry at the thought of losing plug on. World-class scholars, like world-class athletes, will not quit.

In a culture feeding on instant gratification, you Techers — who look a lot like mere college students — are heroes.

I knew a crew coach who defined the word "gallant" by describing a race where his oarswomen kept pulling while their boat filled from a puncture and they slowly sank. Sometimes as I watch the gang from my place at Caltech valiantly striving to learn to overcome those problems while mired in a larger culture offering little encouragement, the word "gallant" comes to mind. And I wonder what might happen if the support you gain from parents and each other was fortified more markedly by the culture benefitting from your endeavors here . . .

But with a new year and the Class of 2007 comes optimism. The tradition continues. And those in the know hold their breath and hope. And much of that hope is invested knowingly or unknowingly in the students here at the California Institute of Technology.

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## Revel Ponders Caltech's Leadership Structures, Renovation of Houses

By JEAN-PAUL REVEL

Last year, in another column, I wrote something to the effect that dissent can form the basis of a healthy discussion of problems. But for progress to be made on resolving contentious issues there must be trust between the parties, the confidence that that neither side is trying to take advantage of the other. Familiar, no? After all that is the very foundation on which Caltech operates.

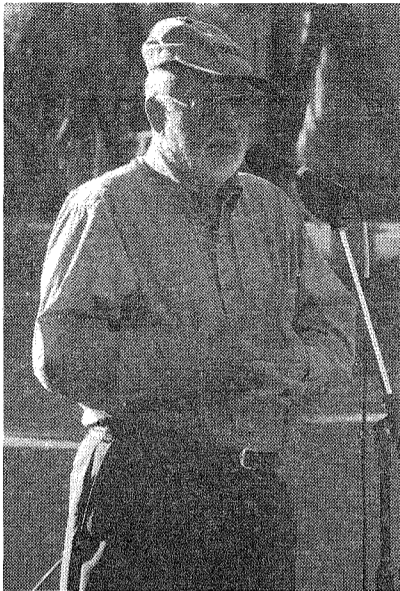
We are fond of saying that Caltech is an unusual place. That can refer to the 3 to 1 ratio, to the number of Faculty who have won Nobel Prizes, to our beautiful grounds, to our superb location (although that may be obvious only in the winter). I am not talking about how good the food, how bright the students, dedicated the staff, stupendous our athletic teams (well...). I am not even talking about how clear the views through our telescopes, how intense our presence (through JPL) in outer space – none of those things. They and so many others are remarkable, but to me the most remarkable thing is the extent to which the students are trusted to govern themselves and to participate in Caltech's governance and the consequences that flow from that.

To a large degree students manage their own affairs, through an elected independent body – ASCIT and its committees – and through the IHC, which coordinates activities in the Houses. Students also participate in the daily governance of the Institute. The faculty bylaws state that "each standing committee shall accept a number of students that does not exceed one third of the faculty membership on that committee... Except that two student members will be permitted on a committee having five faculty members." I wonder if the people writing that seriously considered using only 2/3 of a student and if so, which 1/3 would be considered superfluous. But never mind, there are bigger problems, which have to do with the overlapping areas of jurisdiction between administrators and faculty on the one hand and the student body on the other. Who runs this place anyway – an area of conflict perhaps made specifically prickly by the opposing views as to how to deal with the student Houses.

The Houses were originally built to replace a combination of dormitories and frats. After a delegation of students studied the housing scene at other schools here and abroad, the philosophy developed was described "as an expression of the desire on the part of the Institute to supplement the present intellectual training of the students with a cultural and social development which is not possible when student social contacts are limited, or when living, lounging and dining accommodations do not reflect a suitable atmosphere." (Bulletin of the California Institute of Technology, Vol 41, n°135, p.3, 1932)

Pictures taken at the time they were built show houses that are pretty spiffy indeed, but now the South Houses are more than 70 years old. Do they and the 40 some years old North Houses still fulfill the dreams of those who had them built?

Well do they? That depends on whom you talk to, and even to a greater extent yet what aspect of



the Houses is in question. Most of the students, I believe, are happy in their abodes, and to many alums their house is a nest remembered fondly and longed for as much as the warmth of one's very family. When a committee of students, faculty and administrators, with the head-spinning acronym, TURLI, undertook a detailed examination of the state of the houses last year and made recommendations for their future, there were mixed reactions. There is to my knowledge little disagreement with the need for physical repair. Now is the time to bring them up to modern standards. The TURLI report did raise fears because it also found reason to propose changes in "culture" that many students found hard to accept.

Although I have not been directly involved in most of this, I understand that now is the time for a major commitment of funds and effort to renovate the Houses. But who in their right mind would provide the huge sums needed, without some assurance that the fruits of their generosity would not soon be spoiled? As pointed out by Tom Fletcher, ASCIT President, in the October 20 and 27 issues of The Tech, what he calls "trashed Houses..." get in the way. The non-house residence on campus, Avery, certainly has maintained an enviable degree of neatness unmatched by the other Houses. Of course there is the argument that Avery's "pristine-ish" appearance is nothing to be admired. Managing to maintain order and cleanliness yet allowing softening touches to the institutional look would seem to be part of the compromises that could be reached between parties willing to trust each other. Our students have to live and work here in four year shifts, but I am sure they will recognize that the administration has a greater stake, and looks to support many successive classes. It would be a topsy-turvy world if renovations which would profit generations of students to come would be derailed for the narrow interest of those of us who are here now. Let the season be a reason to show that homeliness does not mean adopting the habits of Homer Simpson and crew, or the Osmonds, who surely do not represent the kind of cultural development envisaged by the planners of the House system. How about starting out by cleaning out the courtyards, say, just to show what can be done?...

A bientôt

## More Options Should Be Offered To Increase Student Population Diversity

By LIBIN ZHANG

Caltech President David Baltimore once mentioned that Caltech should offer a more well rounded education, with a greater emphasis on liberal arts. While Caltech undergraduates have to take on average one humanities or social science per term, which is generally more than the number of mathematics or science classes that liberal arts majors at other schools tend to complete, expanding Caltech's strengths beyond mathematics and science can be useful. It would broaden the school's prestige and attract more diverse applicants. Since the number of undergraduate options that are not based on science or mathematics is limited, the following options should be added to the Caltech catalogue.

**Political Science** - It is rather unusual that a school offering 17 classes in political science does not offer an option to utilize those classes. There are only a handful of BEM (Business, Economics, and Management) classes while a BEM option is offered. In recent years, federal administrations have acquired views on global warming and the environment that are not shared by many members of the scientific community. A politically aware individual with combined expertise in political science and some other field of science might prove influential in guiding government policy.

**Psychology** - Psychology is a popular major at other schools, despite the low salaries of its profession. It has appeal to a wide range of society. A Caltech version of psychology in partnership with the Computation and Neural Systems department can provide a uniquely quantitative and scientific approach to the human mind. Psychology students can study Computational Neuroscience and Critical Analysis of Wolframian New Kind of Science.

**Asian-American Studies** - Recent chats by the fireside have brought attention to the growing divide between the Asian and Caucasian population at Caltech. Since some people feel that the Asians are enigmatic and difficult to understand, concerned individuals such as our student leaders can learn Chinese or Russian and see The Matrix or Bill and Ted's Excellent Adventure to become more familiar with Asians and Asian culture. In addition, Asian-Americans may choose to be more in touch with their cultural identity and have a rare op-

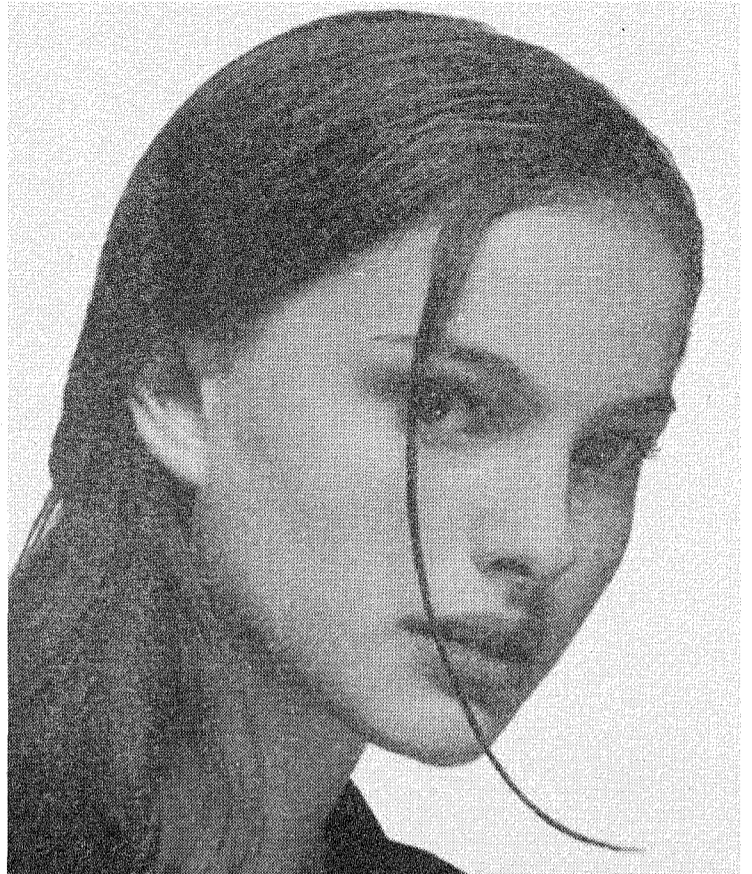


Photo courtesy of photocolorcorrection.com

Natalie Portman doesn't plan to major in film or drama at Harvard University, but rather something scientific in the mathematical, veterinary, or astronomical sciences.

portunity to meet other Asians.

**Caucasian-American Studies** - The growing ghettoisation of the Caucasian-American population at Caltech may one day become a serious problem. Since some people feel that Caucasians are enigmatic and difficult to understand, learning about poetry from Kipling to Becher and playing golf would remedy the lack of understanding. A thorough education in the trappings of Caucasian-American culture would also helpfully prepare Caltech students for the real world.

**Performance Art** - Besides TACIT, Caltech is sorely lacking in performance arts. Since it is possible that one day mural painting will be forbidden, there will be increasing frustration as students lack outlets to express themselves creatively. A greater range of dance and theatre offerings would benefit the student body immensely. It would be even possible to add a quantitative and scientific approach to art, such as Interpretive Dance of the Dirac Delta Function.

**Communications** - The introduction of a Writing Centre is a significant step, but Caltech does not offer a rigorous curriculum in rheto-

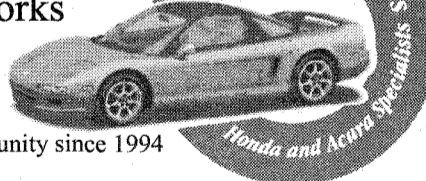
ric and communication. A communications option would be ideal for students disenchanted with science. Students who wish to focus on journalism, advertising, public relations, writing, and so on would be less likely to transfer. Communications will also prove invaluable if the student does become a scientist. Although communications has the reputation of being an easy major at other colleges, Caltech communications would be rigorous and offer classes like Rhetoric Game Theory and Feminist Approaches to Modern Humour.

The above list is only a small portion of the list of choices that would attract a broader range of individuals to Caltech. Some members of the Caltech community may feel that Caltech should remain specialized and concentrate on its core strengths. The 1929 Caltech Catalogue listed the following possible undergraduate options: Civil, Electrical, Mechanical, Chemical, and Aeronautical Engineering; Chemistry; Physics; Geology; Paleontology; Biology; and Mathematics. Whether Caltech should expand or not is an interesting point of discussion.

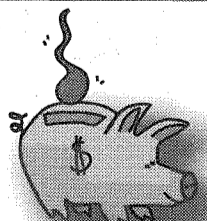
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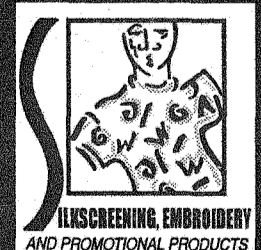
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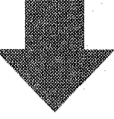
## CALTECH CONVENTIONAL WISDOM WATCH



**Caltech Coders Impress Judges:** Caltech's first team swamps competition in Southern California Regional ACM Coding contest.



**Arnold Inauguration:** GOP Candidate who totally recalled Davis takes office. Tells legislature "You'll be back...tomorrow." As promised, picks three fights.



**King of Pop:** Michael Jackson accused again. Peter Pan turned Captain Hook run out of Neverland to face the beat in the real world of a courtroom.

## Ruddock Tree Trouble To Fall on Deaf Ears?

By LIBIN ZHANG

If a tree falls in the forest and nobody hears it, does it make a sound? If a tree falls in the Ruddock Loading Zone and nobody is injured, does the Administration care?

On Friday November 22, 2003, 9 PM PST, a giant branch split from the main trunk of a mighty tree in the middle of the parking area known as the Loading Zone. The branch completely covered several parking spaces behind Ruddock, blocked one entrance and cut off the walkway along the side of the House. People from the Olive Walk were able to hear the thundering crash. Fortunately, there are no presumed missing individuals or vehicles trapped under the tree branch.

This incident is not the first time a significant tree branch has fallen this year in the Ruddock Loading Zone. Over the summer, a previous branch from the tree collapsed and fell on the automobile of a Ruddock resident. Luckily, only property was damaged and nobody was hurt.

The tree was inspected by offi-

cial-looking individuals after the summer incident, but it somehow managed to have another branch detach. In addition, there were inspections of the tree over a bee problem. Nevertheless, repeated inspections of the tree failed to generate a warning over a future branch collapse.

While tree inspection is probably not as training-intensive as weapons inspections, repeated failures of the same tree do raise some eyebrows. Has the tree inspectors simply failed to notice the imminent danger, or has there been some negligence or indifference on the part of the Powers That Be?

It may have been only due to the fact that students do not loiter outside much on Friday night that any tree-related injuries were avoided. Perhaps an official statement and assurance will be issued, but Caltech students may forever cower in fear whenever passing under the shade of a towering oak.



L. Tran/The California Tech

The collapsed tree has been troublesome in the past, having lost a branch that damaged a car and hosted several large colonies of bees.

# GALCIT Celebrates 75 Years With History Lesson, Tours, Symposium

By MARK WHEELER

PASADENA, Calif. - It might seem a bit of a stretch to see what the flight control of a 747 and the way a boxfish maneuvers in very turbulent water have in common. But such thinking is all in a day's work within the walls of the California Institute of Technology's Graduate Aeronautical Laboratories (GALCIT), which last week celebrated its 75th anniversary.

It's fitting that GALCIT celebrated its 75th in the same year the world celebrates the 100th anniversary of flight. GALCIT's celebration spanned two days, Friday and Saturday, November 14 and 15. On Friday there was an all-day symposium on solid mechanics and laboratory tours in the afternoon. On Saturday there were presentations and a panel discussion on different aspects of aeronautical and astronautical research by various alumni and guests, followed by a banquet in the evening.

GALCIT was formally established in 1928 as the Guggenheim Aeronautical Laboratory by a donation from the Daniel Guggenheim Fund for the Promotion of Aeronautics. It was one of seven such donations made in the 1920s to advance the then-dismal state of aeronautical science in the United States.

Its first director was Theodore von Karman, one of the early scientific pioneers in aeronautics. Under his leadership, GALCIT became the birthplace of aeronautical research in Southern California. This led to the rapid development



Courtesy of mek.kosmo.cz

**GALCIT scientist Frank Malina helped establish Caltech as a major force in rocket development before World War II.**

of the area's aeronautics industry in the 1930s and ultimately to the modern aerospace industry. The original investment of the Guggenheim Foundation was the beginning of U.S. supremacy in aeronautics research, particularly for commercial and military aviation.

The most famous project of GALCIT was the establishment of the Jet Propulsion Laboratory (JPL), which today is the lead NASA institute for planetary exploration. It grew out of a combination of scholarly and popular interest in rocket propulsion.

Beginning in 1935, GALCIT students and staff, including Frank Malina, A. M. O. Smith, H. S. Tsien and W. Arnold, joined with two young explosives entrepreneurs, Jack Parsons and Ed Forman, to build and test rockets.

The first long-duration solid propellant rocket motors and spontaneously ignitable liquid propellants were developed by the group. The solid propellants enabled the development of jet-assisted take-off rockets used in World War II and the founding of Aerojet Engineering Corporation, the first U.S. manufacturer of rocket engines.

Ultimately, the liquid propellants were used in the Apollo program and the Titan missile. JPL was established as a separate organization in 1943 and now plays a key role in robotic activities in deep space and planetary exploration.

The original concept of von Karman was that GALCIT should be an institute in the European style that developed "... a tradition of research and teaching which stresses an appreciation for real applications in a very broad and deep base of fundamentals."

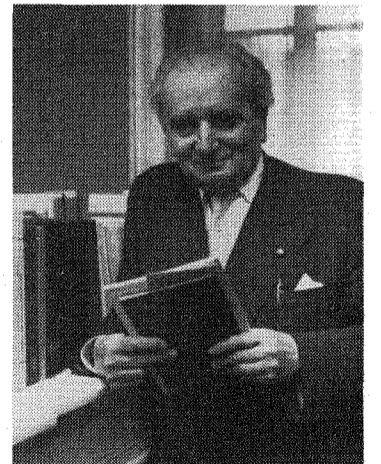
Originally the application was strictly aeronautics, the development and operation of aircraft and many contributions were made to aircraft structures, aerodynamics and propulsion. But over the years the subject of aeronautics has been broadly interpreted to be "a wide discipline encompassing a broad spectrum of basic as well as applied problems in fluid dynamics and mechanics of materials."

These days that's led to research into the study of fluid and solid

mechanics and the use of specialized large facilities like the Lucas Adaptive Wall Wind Tunnel, the supersonic shear layer facility, the free surface shear flow tunnel, the T5 hypervelocity shock tunnel and the Ludwig tube.

In addition, there are smaller laboratories to study cardiovascular fluid dynamics, combustion and detonation. They also conduct numerical studies of vortex dynamics, turbulent mixing, fracture, the mechanics of materials and shock waves.

All of which leads to the boxfish and the 747. It is just one specific example of the kind of work that goes on at GALCIT and is part of the work of Morteza Gharib, the Hans W. Liepmann Professor of Aeronautics and Bioengineering at Caltech. Gharib believes the next wave of smart propulsion devices



Courtesy www.th.physik.uni-frankfurt.de

**GALCIT Founder Theodore Von Karman was a aeronautics pioneer.**

will be based on the biomechanics of flying and swimming.

The goal, then, is to learn how nature engineers these things, with the hope of gleaning insight into the design of such aircraft as the 747. So one of the animals he studies is the humble boxfish, which is capable of staying within one millimeter of a sharp coral reef in highly turbulent water. It does this, Gharib notes, using "seven fins that are flapping and creating vortices here and there, keeping the fish right there, dead accurate." Seventy-five years and GALCIT is still learning.

# Veterans' Advocate Addresses Crowd; Expresses Concern for Soldiers' Health



D. Korta/The California Tech

Radio host and Gulf War veterans' advocate Joyce Riley addresses concerns that the United States does little to protect the health of its soldiers. Signs of Gulf War illness in soldiers after the recent war in Iraq have heightened these concerns.

# Caltech Credit Union Expands Service With Travelers' Checks, Increased Staff

By IRAM PARVEEN BILAL

Through over 50 years of its existence, the Caltech Credit Union has grown from 7 members and assets of \$35 to almost 30,000 members and \$650 million in assets. Membership has also been expanded to include every segment of the Caltech family, from students to faculty to members of the Alumni association to family members of the Caltech community.

The latest service expansion of the Credit union is from its basic share account and loans to the new travelers' checks. "We are very excited to be able to offer traveler's checks. Especially with holidays coming, we are expecting an increase in membership due to this new service. We now have the special American Express gift checks."

This service has been in planning for a while and was needed because of the limited amount of cash for disbursement out of accounts to members. With the addition of this service, CEFCU's Caltech branch

is now considered a "full service" branch as the other two branches, which are located at JPL and Foot-hill, respectively.

The services that make CEFCU a full service branch include regular shares/savings accounts, consumer loans/lines of credit, significant loans, auto loans, real-estate loans, home equity lines of credit and first trustees which are all at competitive rates. In addition, they have the VISA program that includes all students, regardless of their college of enrollment.

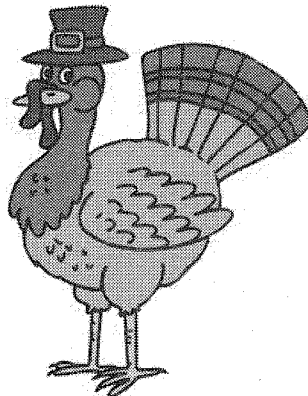
Also, the Union has doubled its staff since its relocation to Wilson. The staff at the Credit Union helps with advice and counseling in addition to regular transactional help. Branch manager, Brian Spritzer, who has been with Caltech since 1977, said, "We have a fully staffed loan department, which is helping us expedite our loan and funding process."

CEFCU is also helping with outreach by offering scholarships of \$500 to five high school students

yearly. This past year, one of the winners, Elizabeth Gilliam '07, decided to come to Caltech for her higher studies.

In an effort to make members and potential members aware of the available services, marketing manager, Pattyl Aposhian mentioned the newly started "e-services" package whereby members can make online transfers. She also mentioned the "star youth account" which is a program that enables children ranging from newborn to 17 years of age to have accounts.

With a vision of "a world of financial security for all", CEFCU is working towards not only expanding its members' pool but also its service package to qualify as a fully competent banking service for the Caltech community.



Happy Thanksgiving from The Tech

The California Tech  
Caltech 40-58  
Pasadena, CA 91126

# Homeless Shelter Chefs See Different Side of Life

Continued from Page 1, Column 5

When the Caltech students first got involved with the Union Station program, they used to get leftovers from Chandler Dining Hall. Said Zacharias, "That was pretty easy: we would just grab the main dish from Chandler and take it there and heat it up. Now we literally cook dinner from scratch, which is a lot more challenging." However, she added, "I definitely like it better that we cook from scratch, because it makes you feel like you're really doing something."

To Shen, the most rewarding aspect of this program is getting a different perspective of life from the typical college student aspect. "It's different to see stuff you don't nor-

mally see, especially as a Caltech student, where you can have a very sheltered experience," he remarked.

He also commented that the chance to do something besides schoolwork or hanging out with friends was valuable. While giving up a Saturday night to cook and serve food at a homeless shelter seems like a very noble use of time, Shen is quite modest: "I don't think it's a big deal at all, it's really a very small thing."

Shen, Medwood, Zacharias and all the other Union Station volunteers are enriching not only their own lives, but also the lives of others and should be very proud of the success of their efforts.

# Soccer, Volleyball, Cross Country Seasons Close

By MIKE RUPP

## Co-Athletes of the Week

Ben Solecki & Kai Sung  
Men's Water Polo

There were many outstanding performers for this year's Men's Water Polo team, who's 10 wins were the most the program has had since the 1986-1987 season. Seniors Ben Solecki and Kai Sung were specifically cited by their coaches for their contributions not only at this past weekend's SCIAAC Championships, but also throughout the year. Solecki had 4 goals in three matches, and Sung's rigorous defense kept the Beavers competitive at both ends of the pool. Congratulations to both Student-Athletes on an outstanding season.

## Week in Review

Women's Volleyball (6-24)  
Head Coach: Brent Reger  
Season completed.

Men's Soccer (1-19)  
Head Coach: Rolando Uribe

The Men's Soccer team hosted its 2003 Alumni Match this past Saturday. The match resulted in a 2-2

## Men's Soccer

CALTECH ..... 2  
Alumni ..... 2

tie as the current squad of Beavers met many of their predecessors on the playing field, with a party afterwards. In other Soccer news, Sophomore Forward Stuart Ward was named to the SCIAAC's All-Conference 2nd Team for the second consecutive year. Ward tied for the lead in points for the Beavers, with 7 points in 17 starts. Congratulations to the entire team on the end of their season.

Men's Water Polo (10-14)  
Head Coach: Clint Dodd

To close the season, the Men's Water Polo team had a 1-2 record at the SCIAAC Conference Championships this past weekend, giving

## Men's Water Polo

CALTECH ..... 1  
La Verne ..... 8

CALTECH ..... 3  
Occidental ..... 9

CALTECH ..... 12  
Cal Lutheran ..... 9

them an overall conference record of 2-8, good for 7th place in the conference. Top performances at the conference championships included Senior Ben Solecki and Freshman Tom Jurczak who each had four goals over the course of three matches.

Cross-Country  
Head Coach: Scott Jung

The Men's and Women's Cross Country teams headed up to Portland, Oregon this past weekend for the NCAA West Regionals. Sophomore and two-time 2003-04 Caltech AOW Gustavo Olm finished 38th in the Men's competition with a time of 27:18.0. Freshman Will Sladek finished second for Caltech, and in 67th place overall. On the Women's side, Junior Kamalah Chang finished in 68th place overall. Congratulations to the whole team on the end of their season.

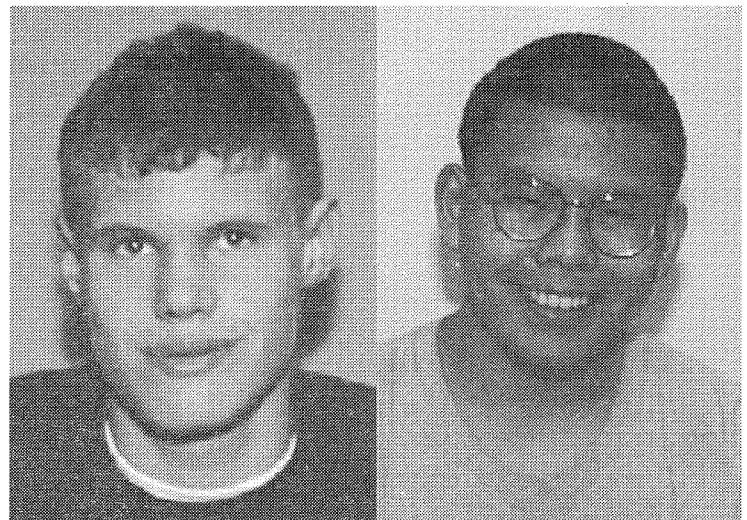
Fencing  
Head Coach: Randy Paffenroth

Check next week's Weekly Release for a recap of the Fencing team's trip to UC San Diego.

## This Week in Caltech Athletics

Men's Basketball - Colorado College / Radisson Thanksgiving Invitational

Women's Basketball - Nov. 25 at 7:00 pm vs. Chapman University  
Caltech Tournament - Nov. 28 at 8:00 pm vs. S.J. Christian  
Caltech Tournament - Nov. 29 Consolation Game at 12:00 pm, Championship at 2:00 pm



Courtesy of donut.caltech.edu

Seniors Ben Solecki and Kai Sung were named Athletes of the Week this week by the Athletics Department for their outstanding performance this season on the Men's Water Polo Team. The team posted 10 wins, the highest in over 15 seasons. Solecki is an unaffiliated BEM major. Sung is a Biology major from Ricketts.